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THE WHITE HOUSE

WASHINGTON

February 21, 1958

MEMORANDUM FOR DR. J. R. KILLIAN, JR.

PRELIMINARY OBSERVATIONS ON THE ORGANIZATION FOR THE
EXPLOITATION OF OUTER SPACE

The exploitation of any unknown areas involves two distinct objectives, - one, exploration and two, control. The first is largely a scientific operation and the second largely military.

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At the present time plans for the exploitation of outer space fall more nearly into civilian-scientific areas rather than into military areas. The "take" from the probing of outer space by rockets, satellites and interplanetary vehicles will be of more direct interest to the scientist than to the strategist. We can discount at this point most of the "Buck Rogers" type of thinking which anticipates hordes of little men in space helmets firing disintegrators into each other from flying saucers. Certainly, ICBM's will transit portions of outer space in performing their missions, but for the moment the chief military interest lies in better methods of surveillance, communications and long-range weather forecasting.

The potential space explorations in the immediate future are well outlined in a paper dated 14 February 1957 titled "Basic Objectives of a Continuing Program of Scientific Research in Outer Space" by Hugh Odishaw, Executive Director of the U.S. National Committee for the IGY of the National Academy of Sciences. A good layman's summary of the same subject appeared in a recent issue of LIFE magazine by Dr. Van Allen.

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The control of outer space, basically a military matter, involves many troublesome questions of international law. The problem of the vertical extent of national sovereignty has yet to be determined. It appears to depend on the capability of any nation to deny access to space above its territory by physical means. ~~As far as can be determined,~~ No body of international law yet exists covering

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the use of outer space. As a matter of fact, no acceptable definition has yet been evolved as to where "air-space" and "outer-space" begin and end. Maritime law has no such problem because, under most conditions, one is either afloat or ashore. The limits of the "high seas" have been determined by international agreement on the basis of very easily made physical measurements. With respect to outer space, however, such questions are wide open (a discussion of these problems is to be found in our files in papers on the subject by Professor John Cobb Cooper and others.)

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The control of radio-communications in our upper atmosphere and in space is another problem which must be settled by international agreement if a completely chaotic condition is to be avoided. Within the next ten years the probabilities are that dozens, if not hundreds, of objects will be in orbit around the earth. Apart from the question of sorting scientific intelligence from this "celestial junkyard" it will be highly important from a military point of view to be able to distinguish an incoming ICBM from other less lethal objects.

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By any standards of comparison, the problems involved are tremendous and the programs which must be undertaken in their solution will be lengthy and costly. The technical feasibility studies and the forecasts that have been made by Doctors Purcell, York and others, anticipate the development of such items as booster rockets of one million to five million pounds thrust in a period of 15 to 25 years. It is estimated that such development programs, quite apart from the missile requirement of the military, may cost anywhere from 500 million to a billion a year. We are, therefore, considering something of the general order of magnitude of the AEC. Obviously the Bureau of the Budget will exert an important influence in deciding whether the national economy can stand such a drain for such purposes.

General Organizational Requirements

In considering the proper organization to handle a project of such magnitude two factors must be taken into consideration, - first, how to get the program off the ground immediately, ie. how to get something started now with the facilities that are presently available and, second, how to gear-up for a long-range program to take care of the 5-10-25 year development. This leads to the thought that some sort of Ad Hoc organization could be set up in a very short time, possibly by Executive Order of the President, to take care of the immediate requirements. Such a group would

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